

Density Lab

Name: _____

Objective: In this lab you will need to measure precisely to calculate densities of various objects.

Materials: Density blocks, cylinders, ruler, weight scale (400g), paper, pencils, calculator

Procedure: To measure density, two pieces of information are needed: mass and volume. To find the mass, use a weight scale and record the information given (in grams). Use a ruler to find the volume by measuring the sides/diameter/height or other lengths as needed. Divide the mass by the height to find the density.

Calculations:

Station A (cubes): Fill in the table below

Object	Length of 1 side (cm)	Volume (cm ³)	Mass (g)	Density (g/cm ³)
1				
2				
3				
4				
5				
6				
7				
8				
9				

Station B (blocks of different sizes): Fill in the table below

Object	Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)	Mass (g)	Density (g/cm ³)
1						
2						
3						
4						
5						
6						
7						
8						

Analysis: Answer the following questions

Station A:

1. Because the sizes of the cubes are all relatively the same, what would be an easy way to check which block would have the greatest density?

Station B:

2. Using the chart to the side, classify each of the cylinders to find out which ones are which. (not all of them will be used)

Object 1: _____
Object 2: _____
Object 3: _____
Object 4: _____
Object 5: _____
Object 6: _____
Object 7: _____
Object 8: _____
Object 9: _____
Object 10: _____

Material	Density (g/cm ³)
Copper	9.1 - 10.2
Brass	8.0 - 9.0
Glass	2.8 - 3.1
Rubber	3.5 - 3.8
Acrylic	1.12 - 1.3
Tecaform	0.91 - 1.1
Aluminum	2.59 - 2.8
Delrin (white)	1.36
PVC (gray)	1.46
Teflon	2.06
Poplar Wood	0.35 - 0.59
Oak Wood	0.60 - 0.90

Conclusion: Write a couple of sentences describing the properties that can affect density. From your experience, what are some items that have a high density?
What about a low density?
